UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/060,313	04/15/1998	MARCIA C. LINEBARGER	TN-104	9463

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ROCCO L. ADORNATO
UNISYS CORPORATION
UNISYS WAY, MS/E8-114
BLUE BELL, PA 19424-0001

EXAMINER
ARMSTRONG, ANGELA A

ART UNIT	PAPER NUMBER
2626	

DATE MAILED: 09/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>28 October 2002</u>.

2a)☒ This action is **FINAL.**   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-33* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2.   Claims 1-8, 10-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wen

(US Patent No. 5,562,453) in view of Nojima (JP 409122106A) and Takebayashi et al. (US

Patent No. 5,357,596).

3.   Regarding claims **1, 2-5, 12-16, and 21-33**

"visual display device…" is taught by Wen at Figure 1, element 5 and col. 3, lines 8-48;

"microphone…" is taught by Wen at Figure 1, element 2 and col. 3, lines 8-48;

"speaker…" is taught by Wen at Figure 1, element 6 and col. 3, lines 8-48;

"processor…" is taught by Wen at col. 3, lines 8-48 as one of the standard computational

functional units of a computer to perform functions of input, output, computation, control and

memory;

"displaying a picture", (see column 4, lines 6-7 where Wen discloses that the system

prompt displays a picture of the item selected category);

"generating a speech prompt", (see column 4, lines 5-6 where Wen discloses that the

system provides the user with a "first vocal prompt");

"inputting a speech response", (see column 3, lines 10-11 where Wen discloses that the input to the system is via microphone);

5.   At col. 4, lines 55-57, Wen teaches a scenario in which the user is prompted with the question "What color is this flower" and the user may respond with "That lower is white". However, Wen does not specifically teach user identification of a plurality of aspects or prompting for a sentence description of the aspects.

In a similar field of endeavor, Nojima (EP101322 A1 English Equivalent Document of JP 409122106A) discloses presenting a cartoon (a plurality of pictures or aspects) to a user (page 3, lines 13-16), prompting the user to provide a description of the contents of the picture (page 5, lines 33-63) wherein the description of the aspects is in a sentence structure and determining if the user provided description accurately describes the picture (page 6, lines 24-51). Nojima teaches that the invention is applicable in judging the health of recognition and understanding of a subject (page 2, section entitled "Technical Field").

Therefore, it would have been obvious to one of ordinary skill at the time of invention to modify the system of Wen to implement displaying of a plurality of pictures or aspects, prompting a user to provide a description of the displayed plurality of aspects in a sentence structure, and determining if the user provided description accurately describes the aspects as taught by Nojima, for the purpose of judging the health of recognition and understanding of a subject, as suggested by Nojima.

6.   Wen does not specifically teach performing speech recognition on the input speech responses or performing natural language analysis. However, both speech recognition and natural language analysis are well known in the art of speech signal processing.

In a similar field of endeavor, Takebayashi et al teach a speech dialogue system for improving human-computer interaction, which implements a speech understanding unit that is capable of recognizing words or sentences in an input speech, as well as extracting a semantic content intended to be expressed in the input speech (refer to col. 8, lines 3-68 continuing to col. 16, lines 1-17). Takebayashi teach that the speech dialogue system is capable of realizing natural and smooth dialogue between the system and a human user (abstract).

Therefore, to the extent that Wen does not teach performing speech recognition and performing natural language analysis, it would have been obvious to one of ordinary skill at the time of invention to modify the biofeedback training system of Wen to implement a speech understanding and dialogue management system which performs speech recognition and natural language analysis as taught by Takebayashi et al, for the purpose of realizing natural and smooth dialogue between the system and human user, as suggested by Takebayashi et al.

7.   Wen does not specifically teach performing natural language analysis to analyze the semantic content of the input sentence to determine appropriate sentence correctness. However, determining the semantic content of recognized input speech is well known in the art.

Takebayashi et al teach a speech dialogue system for improving human-computer interaction, which implements a speech understanding unit that is capable of recognizing words or sentences in an input speech, as well as extracting a semantic content intended to be expressed in the input speech (refer to col. 8, lines 3-68 continuing to col. 16, lines 1-17). Takebayashi teach that the speech dialogue system is capable of realizing natural and smooth dialogue between the system and a human user (abstract).

Therefore, it would have been obvious to one of ordinary skill at the time of invention to

modify the biofeedback training system of Wen to implement a speech understanding and

dialogue management system which specifically extracts or determines the semantic content of a

recognized speech input as taught by Takebayashi et al, for the purpose of realizing natural and

smooth dialogue between the system and human user, as suggested by Takebayashi et al.

8.   At col. 3, lines 40-49, Wen discloses the system provides feedback to the user indicating

the user's performance on a task. Wen does not specifically teach that the feedback is in

response to correctness of the semantic content of an input sentence. However, Nojima discloses

determining if the user provided description accurately describes the picture (page 6, lines 24-51)

and Takebayashi discloses extracting semantic content of a speech recognized input (refer to col.

8, lines 3-68 continuing to col. 16, lines 1-17).

Therefore, it would have been obvious to one of ordinary skill at the time of the invention

to modify the biofeedback system of Wen to implement determining if the user provided

description accurately describes the aspects as taught by Nojima, for the purpose of judging the

health of recognition and understanding of a subject, wherein the input description is analyzed to

extract semantic content, as taught by Takebayashi et al, and to further implement providing

feedback to the user based on the user's performance of the task, thereby providing to the user an

indication of their health of recognition and understanding.

9.   Wen does not specifically disclose a method of conducting speech therapy. Wen

discloses operational examples for using the system, which teaches how one would implement

the system in a speech-training environment. Therefore, it would have been obvious to one of

ordinary skill in the art at the time the invention was made to take the system disclosed by Wen

and apply the operational examples as taught by Wen to develop a computerized method for

conducting speech therapy. Wen teaches that such a use of her system would be a tremendous

advantage for a user when a person is not available to assist in training.

10.   Regarding claims 6-8 and 17-19, "...altering a visual characteristic..." is taught by Wen

at col. 4, lines 55-62.

11.   Regarding claims 10, 11, and 20, "speech prompt...activated by an icon..." is taught by

Wen at col. 4, lines 63-68 continuing to col. 5, lines 1-3.

12.   Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wen in view of

Nojima and Takebayashi et al. as applied to claim 1 above, and further in view of Shpiro et al.

(US Patent No. 5,487,671).

13.   Regarding claim 9, Wen, Nojima, and Takebayashi teach everything as claimed in claim

1. However, neither Wen, Nojima, nor Takebayashi teach replaying a speech response.

However, refer to Shpiro et al. who disclose a computerized system for teaching speech in which

the system replays the user's response to a testing sequence (Figure 5B, step 520).

Therefore, to the extent that Wen, Nojima and Takebayashi et al. do not replay a user's response,

it would have been obvious to one of ordinary skill at the time of invention to modify the training

system of Wen to implement the speech understanding system of Takebayashi et al. and to

further modify the system to replay the user's response to testing sequences as taught by Shpiro

et al., because such a modification would provide a means for the user to know that the system is

capturing and analyzing their intended response.

Response to Arguments

Applicant's arguments filed October 28, 2002, have been fully considered but they are not

persuasive. Applicant argues none of the cited references speak to the problem of providing

aphasics with training tuned to their problem and further argues Nojima is directed to

determining the health of recognition and understanding of a subject and that Applicant's

invention does not address this, but is directed to training aphasics to form correct sentences, i.e.,

"... the ability to select words and assemble selected words to form sentences communicating an

intended meaning." In response to applicant's argument that Nojima is directed to determining

the health of recognition and understanding of a subject and that Applicant's invention is

directed to training aphasics to form correct sentences, the fact that applicant has recognized

another advantage which would flow naturally from following the suggestion of the prior art

cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex*

parte Obiaya, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

Applicant argues no aspects of any of the cited references appears to contain a teaching

of the limitation of "providing feedback to the user regarding the correctness of the semantic

content", as all the references are directed toward different problems. This is not persuasive

since at col. 3, lines 40-49, Wen discloses the system provides feedback to the user indicating

the user's performance on a task and the teachings of Nojima (determining if the user provided

description accurately describes the picture at page 6, lines 24-51) and Takebayashi (extracting

semantic content of a speech recognized input at col. 8, lines 3-68 continuing to col. 16, lines 1-

17) provide support for analyzing the semantic content of the user's description of a picture.

Thus, the Examiner maintains that one of ordinary skill would clearly recognize the advantages

of modifying the biofeedback system of Wen to implement determining if the user provided

description accurately describes the aspects as taught by Nojima, for the purpose of judging the

health of recognition and understanding of a subject, wherein the input description is analyzed to

extract semantic content, as taught by Takebayashi et al, and to further implement providing

feedback to the user based on the user's performance of the task, thereby providing to the user an

indication of their health of recognition and understanding.

In response to applicant's arguments against the references individually, one cannot show

nonobviousness by attacking references individually where the rejections are based on

combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re*

Merck & Co., 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

In response to applicant's argument that there is no suggestion to combine the references,

the examiner recognizes that obviousness can only be established by combining or modifying the

teachings of the prior art to produce the claimed invention where there is some teaching,

suggestion, or motivation to do so found either in the references themselves or in the knowledge

generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5

USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

In this case, one of ordinary skill would clearly recognize the advantages of modifying the

biofeedback system of Wen to implement determining if the user provided description accurately

describes the aspects as taught by Nojima, for the purpose of judging the health of recognition

and understanding of a subject, wherein the input description is analyzed to extract semantic

content, as taught by Takebayashi et al, and to further implement providing feedback to the user

based on the user's performance of the task, thereby providing to the user an indication of their

health of recognition and understanding, as suggested by Nojima.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing
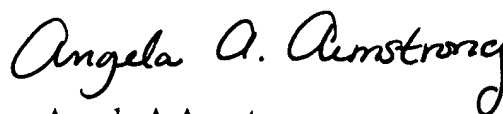
date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Angela A. Armstrong whose telephone number is 571-272-7598.

The examiner can normally be reached on Monday-Thursday 11:30-8:00 PM.

Please note the change in art unit designation for the examiner from old art unit "2654" to

new art unit "2626."

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, David Hudspeth can be reached on 571-272-7843. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Angela A Armstrong
Primary Examiner
Art Unit 2626

AAA
September 4, 2006